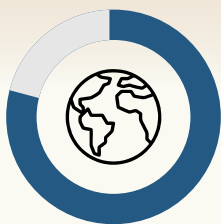
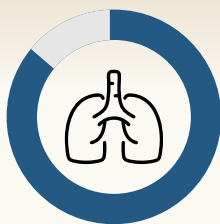


QUICK REVISION MODULE
[UPSC PRELIMS 2022] **GEOGRAPHY**

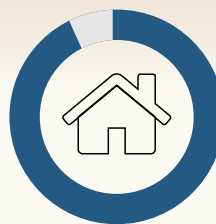
OCEAN Basics and Resources



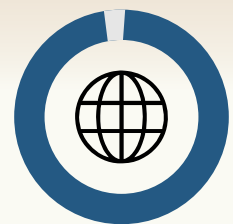
The ocean covers
71% of the earth
It contains.



80% of living
organisms

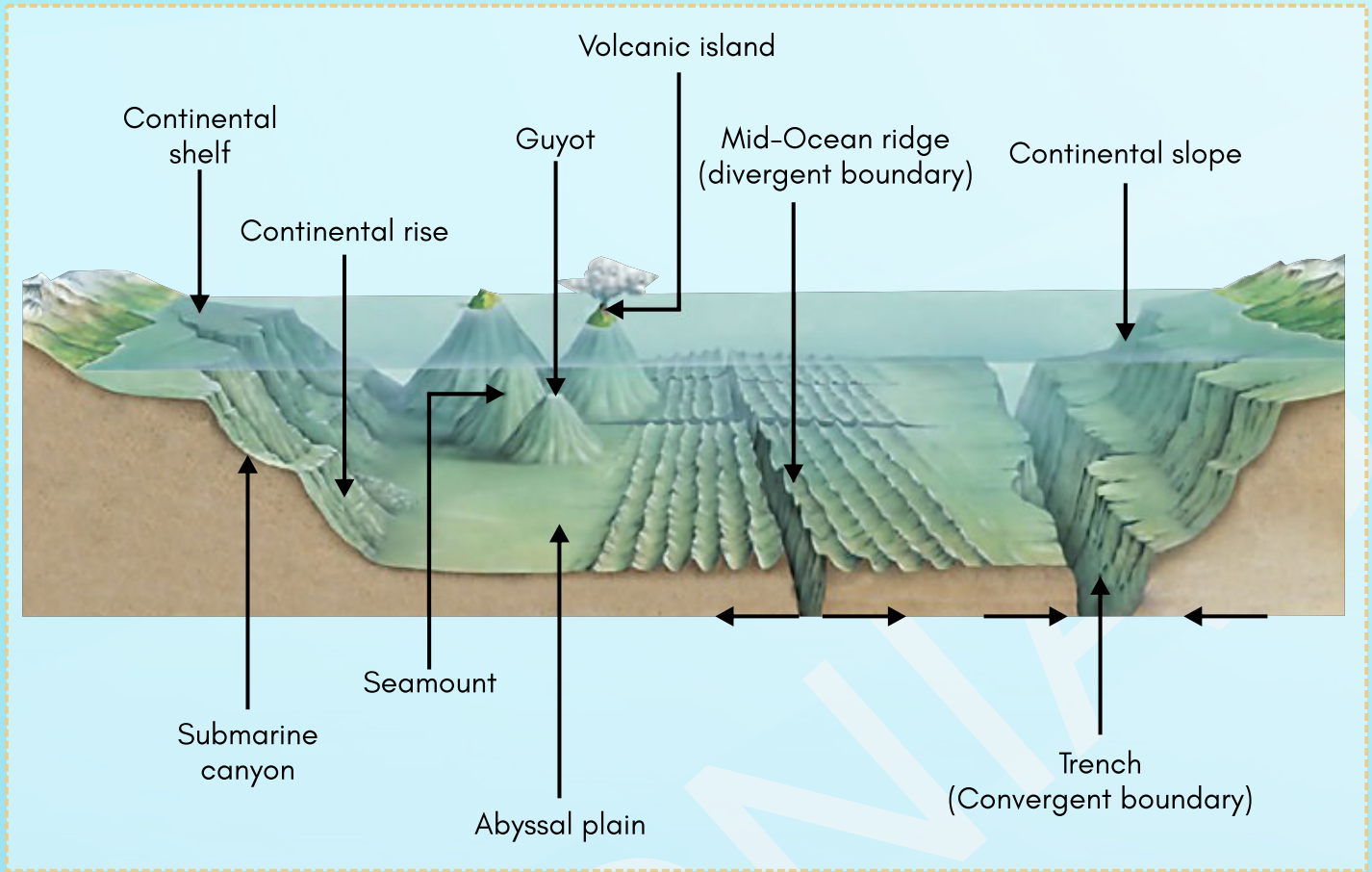


96% of the Earth's
living space



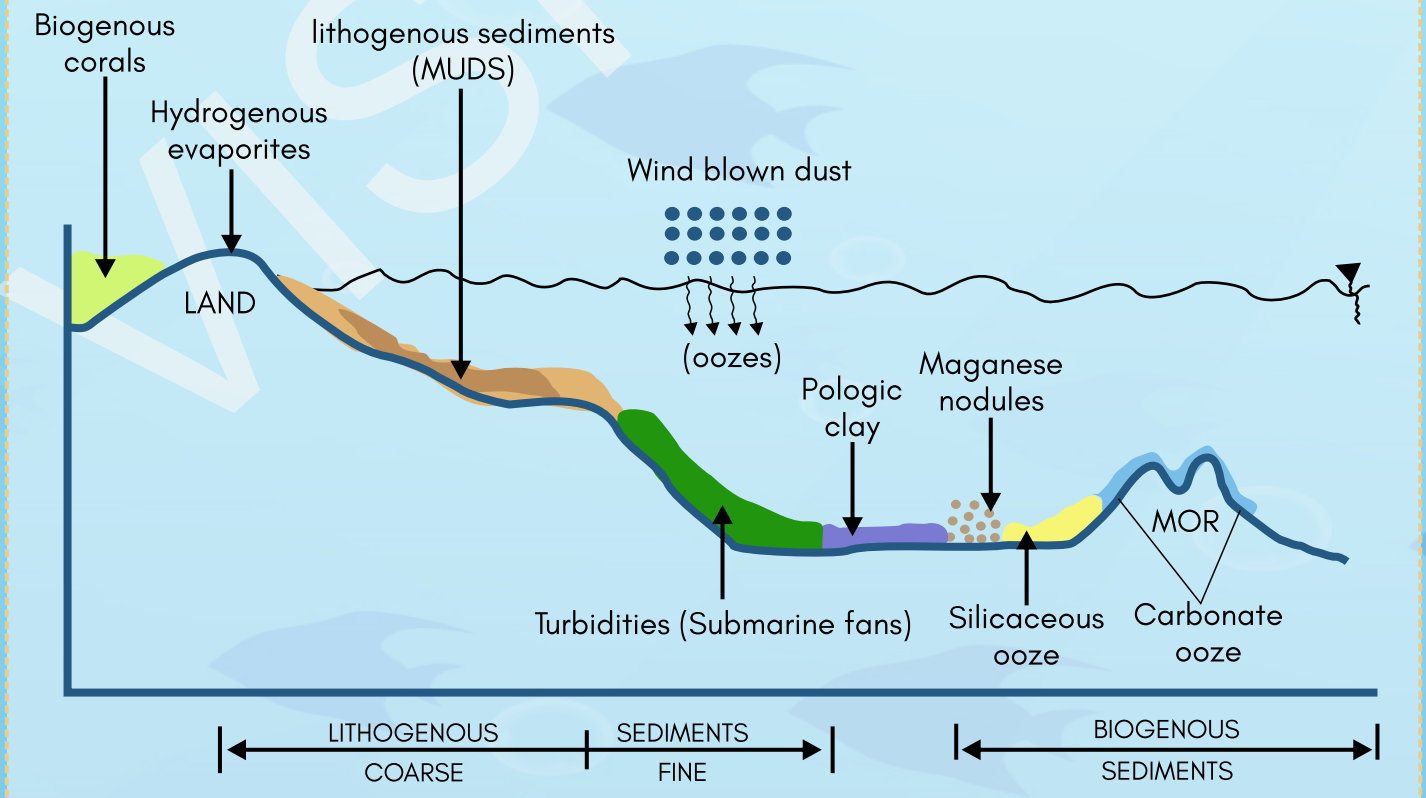
99% of the
biosphere

OCEAN BASIN AND FEATURES



OCEANIC DEPOSIT & ITS CLASSIFICATION

- Major process in ocean deposition is SLOW SEDIMENTATION.
- Oceanic deposits are found as-MUDS, Oozes, CLAY.





FACTORS AFFECTING TEMPERATURE DISTRIBUTION OF OCEANS

Latitude

- Temperature decreases as we move towards poles as amount of insolation decreases polewards.

Unequal distribution of land & water

- Northern Hemisphere receives more heat as has more land.

Prevailing winds

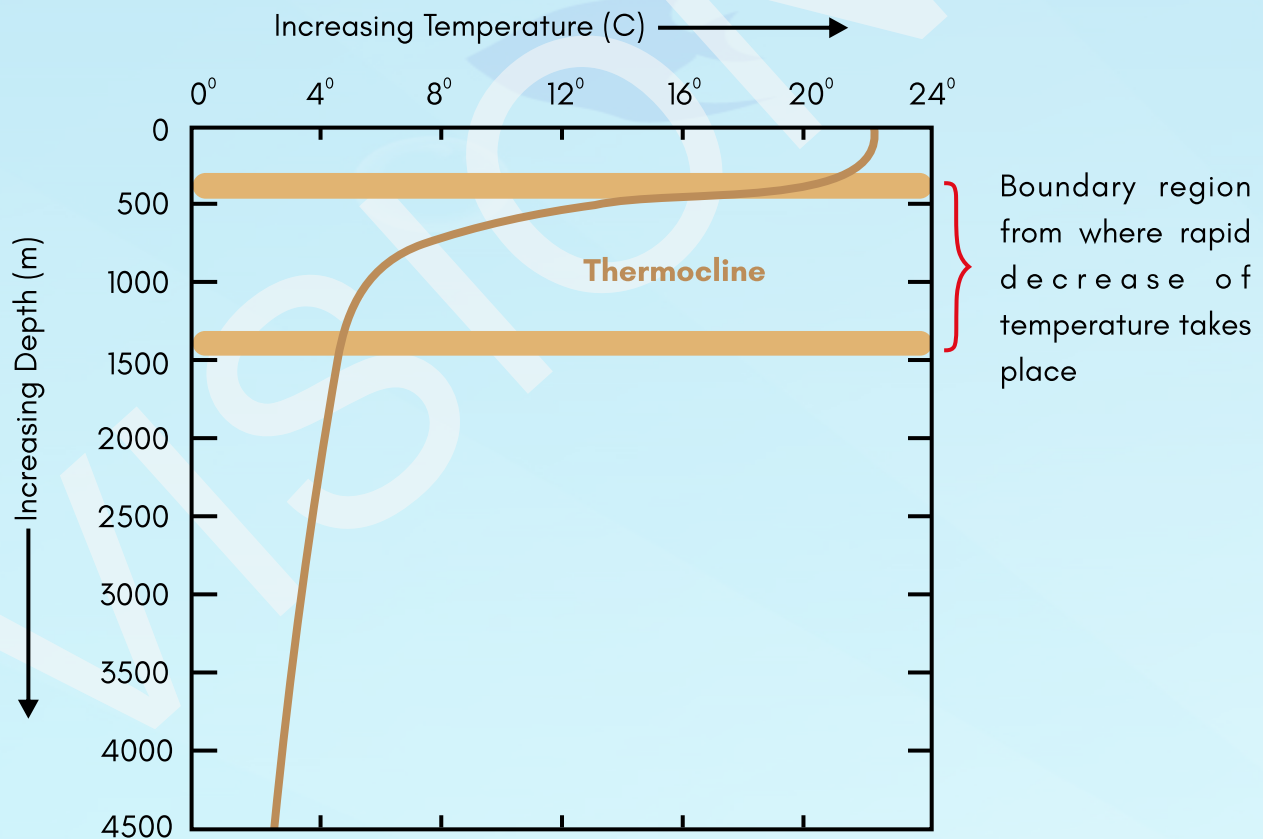
- Due to upwelling & downwelling.

Ocean currents

- Temperature is distributed through warm and cold currents.

VERTICAL DISTRIBUTION OF TEMPERATURE

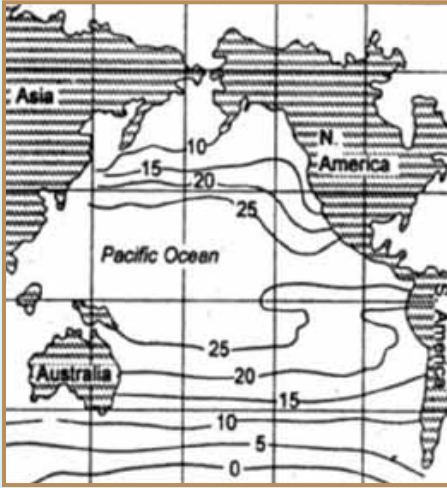
- Upper layer of ocean water-HOTTEST (as exposed to sunrays)
- Heat transferred to lower layers through CONVECTION PROCESS





HORIZONTAL DISTRIBUTION OF TEMPERATURE

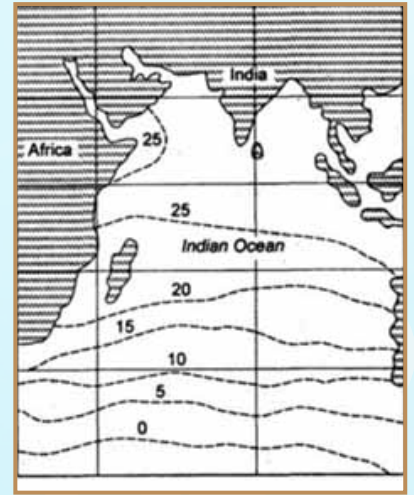
- Atlantic ocean records Highest Average Temperature.



Pacific Ocean Temperature (Aug)



Atlantic Ocean Temperature (Aug)



Indian Ocean Temperature (Aug)

MOVEMENT OF OCEAN WATERS

- Through oceanic waves :** waves are **ENERGY** which moves through ocean surface.



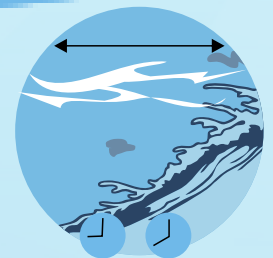
Movement of water molecules

Wind Waves

Wind carries a great deal of energy. When the wind comes in contact with the surface water, there is **friction between air molecules and water molecules**. The energy from the wind is transferred to the water. This results in ocean waves.

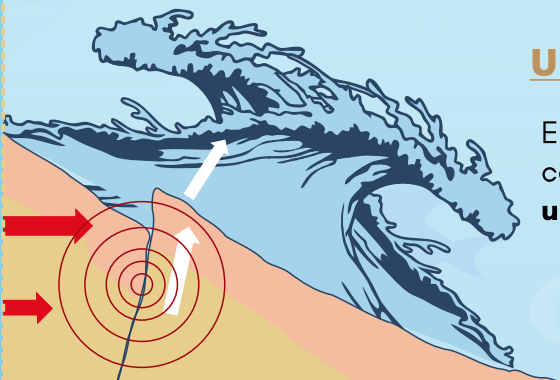
The stronger the wind; the taller the waves .

Other factors which influence waves are the distance the wind has blown over, and the **length of time the wind** has been blowing.



Underwater explosions

Earthquakes under the surface of the ocean cause huge waves called **tsunamis**. Volcanoes, landslides, meteors are other **underwater explosions** that cause these destructive waves.





Largest waves on earth occur in the Indian Ocean

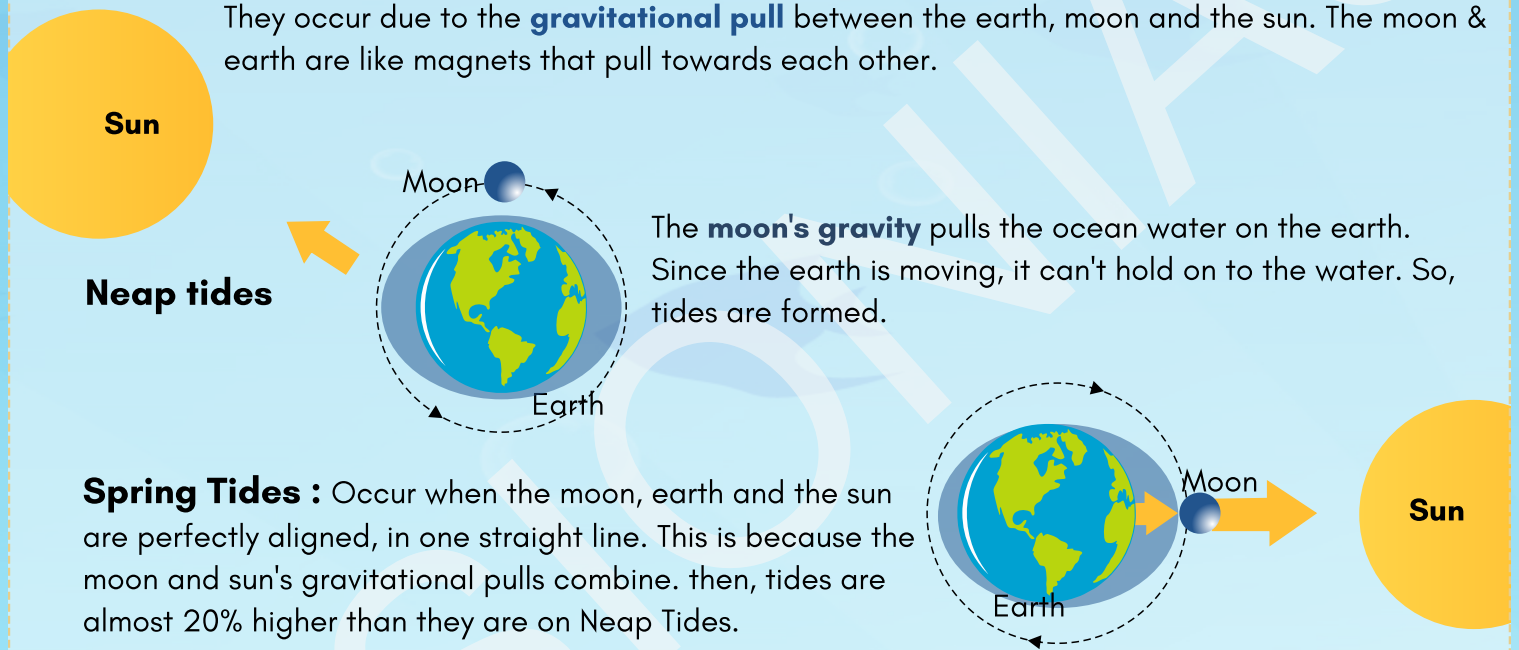
This happens because in the region, the winds blow in the **same direction**, at a **constant speed**. The waves here occur at a height of **7 to 14 metres**.



• Through Tides / Tidal waves

Tidal waves

They occur due to the **gravitational pull** between the earth, moon and the sun. The moon & earth are like magnets that pull towards each other.



Types of tides based on

Height

- ▶ Spring tides
- ▶ Neap tides

Frequency

- ▶ Semi diurnal
- ▶ Diurnal
- ▶ Mixed

Significance of tidal waves

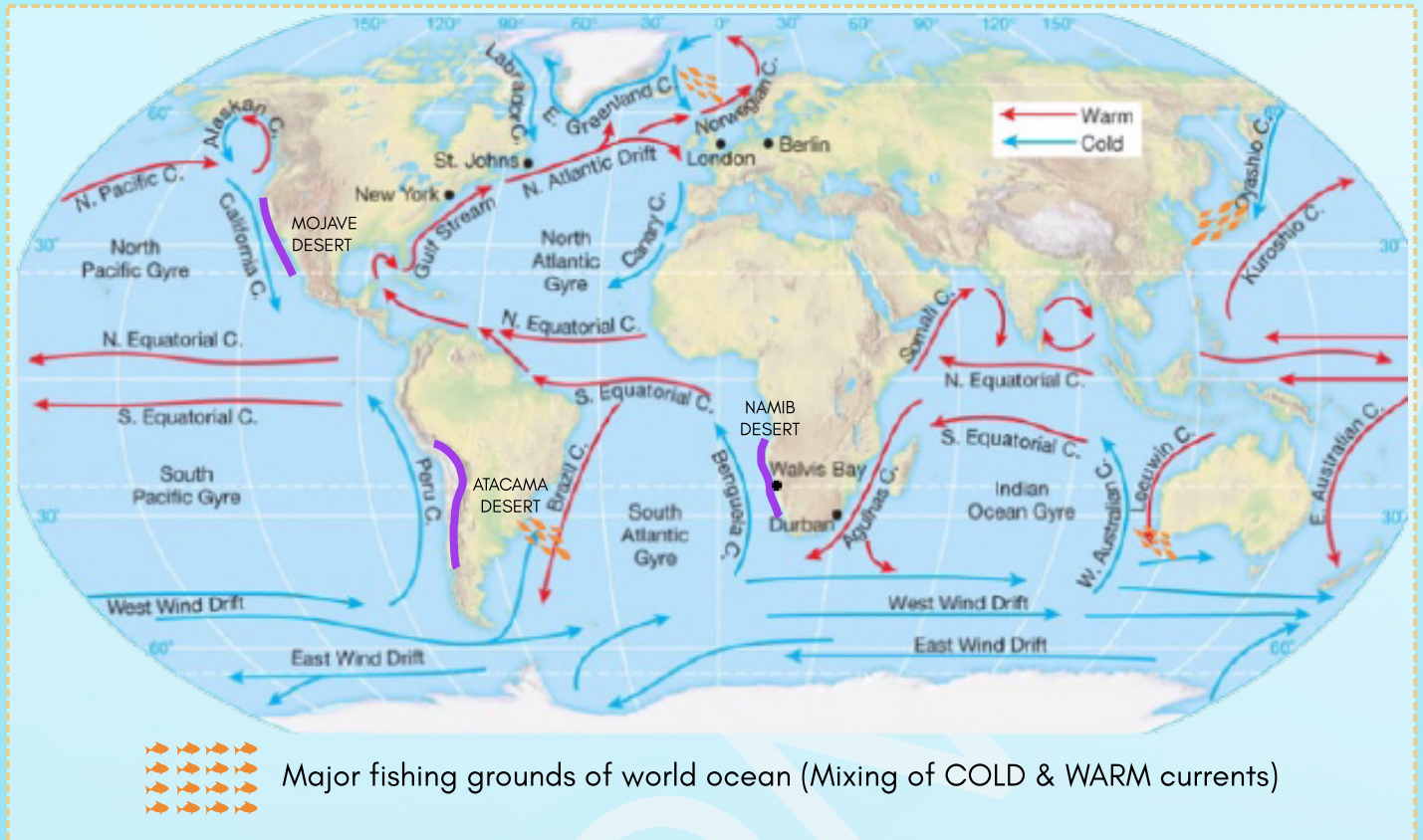
- Important for navigation
- Cleaning of sedimentation
- Electricity generation
- Keeps harbours Ice free (especially in Neap Tides in polar areas)
- Helps in fishing - through high and Low tides.





Through Ocean currents

- Presence of **COLD CURRENT** on western margin of continents – aggravates **ARID** and **DESERT** like conditions.



OCEAN SALINITY

- Total content of dissolved salts in sea water
- Expressed as parts per thousand (ppt)

Factors Affecting Oceans Salinity

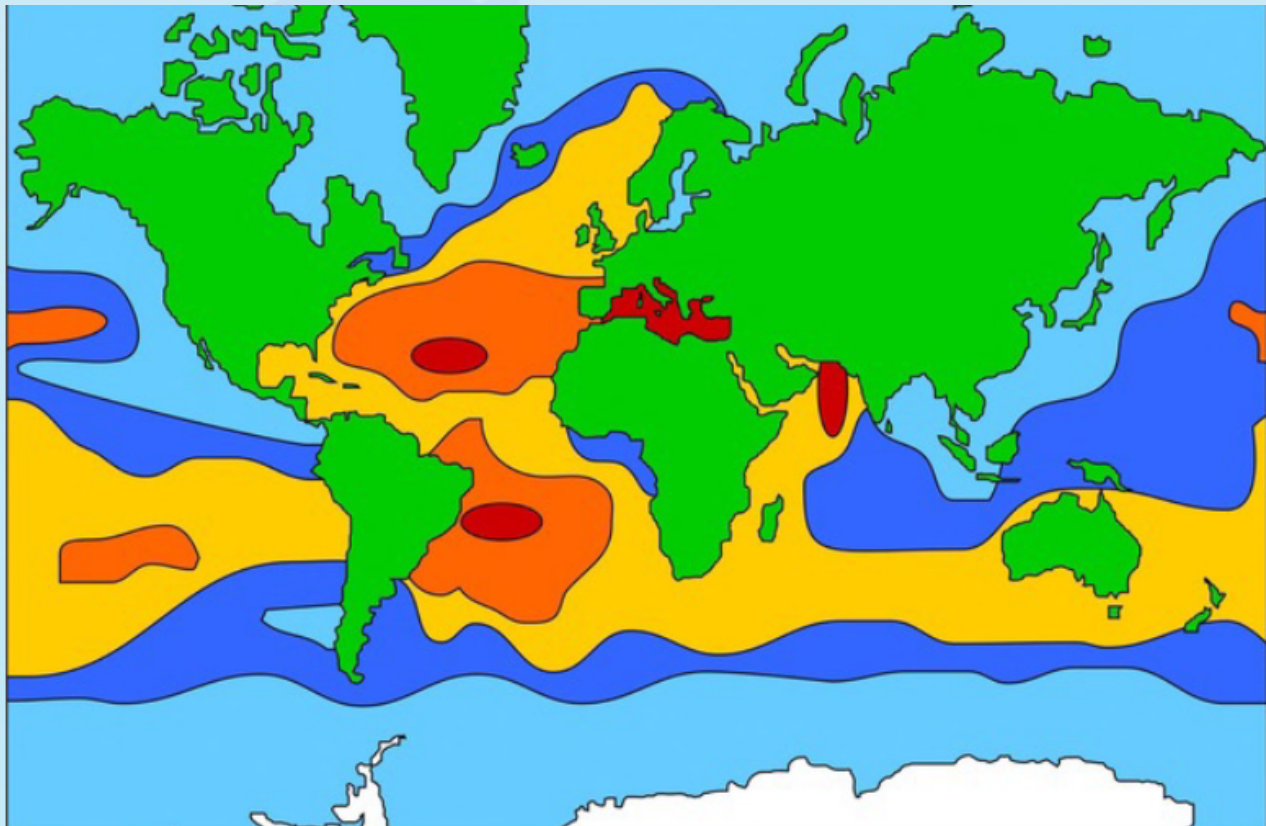
Rate of evaporation and precipitation

Amount of fresh water flow from rivers

Wind velocity

Ocean current

- Salinity generally increases with depth (Zone of transition HALOCLINE)



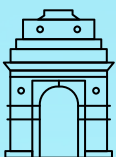
Salinity (ppt) **37** More than 37 **36** **35** **34** Less than 34

OCEAN RESOURCES

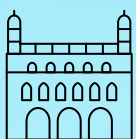
- **Fisheries:** Supports > 170 million jobs
- 60% of dietary protein in tropical developing countries
(Industrial fishing – fishing activities where fish are not used for consumption)
- **Oxygen Generator:** Ocean plants (phytoplankton produces almost half of the oxygen we breathe)
- **Tourism and livelihood to millions**
- **Ecosystem Services:** Temperature moderator – acts as a Heat Sink, Climate Buffer
- **Mining Of Minerals & Energy Resources** (Polymetallic Nodules, Oil, Gas Hydrates)

Copyright © by Vision IAS

All rights are reserved. No part of this document may be reproduced, in a retrieval system or transmitted in any form or by any means, electronic, mechanical, photocopying, recording or otherwise, without prior permission of Vision IAS



DELHI



LUCKNOW



JAIPUR



HYDERABAD



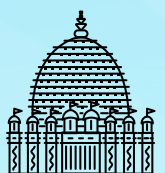
PUNE



AHMEDABAD



CHANDIGARH



GUWAHATI